

146

Analytical UNIVERSITY OF HAWAII LIBRARY Biochemistry PERIODICAL

An International Journal

EDITOR: *Alvin Nason*

ADVISORY BOARD

<i>Norman G. Anderson</i>	<i>Osamu Hayaishi</i>	<i>Manfred M. Mayer</i>
<i>Eraldo Antonini</i>	<i>C. H. W. Hirs</i>	<i>Marshall Nirenberg</i>
<i>Gilbert Ashwell</i>	<i>Evan C. Horning</i>	<i>Kazuo Okunuki</i>
<i>Samuel P. Bessman</i>	<i>Rollin D. Hotchkiss</i>	<i>Gerhard Schmidt</i>
<i>Simon Black</i>	<i>Walter L. Hughes</i>	<i>Herbert A. Sober</i>
<i>Robert M. Bock</i>	<i>Andrew A. Kandutsch</i>	<i>Sidney Udenfriend</i>
<i>Robert L. Bowman</i>	<i>Irving Klotz</i>	<i>Donald D. Van Slyke</i>
<i>Melvin Calvin</i>	<i>Luis F. Leloir</i>	<i>Samuel B. Weiss</i>
<i>Frank Eisenberg, Jr.</i>	<i>Olov Lindberg</i>	<i>Theodor Wieland</i>
<i>John Gergely</i>	<i>Feodor Lynen</i>	<i>George Wolf</i>
<i>Victor Ginsburg</i>	<i>Hugh J. McDonald</i>	<i>Lemuel D. Wright</i>
<i>I. C. Gunsalus</i>	<i>Edward F. MacNichol, Jr.</i>	<i>David A. Yphantis</i>
	<i>Vincent Massey</i>	

VOLUME 23

1968

ACADEMIC PRESS
New York and London



Copyright ©, 1968, by Academic Press Inc.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the Publishers.

Made in the United States of America



CONTENTS OF VOLUME 23

NUMBER 1, APRIL 1968

SAM KATZ AND HOYE A. WALLS. Apparatus for Multisample Thin-Film Dialysis	1
HANS KÜNDIG. Separation of Oxy- and Thiobarbiturates by Thin-Layer Chromatography	6
PAMELA L. RUSS AND RARDON D. BEVILL. A General Procedure for Degrading Radioactive Aldoses	13
D. N. DAS AND G. TOENNIES. A Versatile Buffered Scintillation System	26
CATHERINE M. CHANG, SHIRLEY A. JOHNSON, JOHN R. VERCELLOTTI, AND JOSEPH J. BARBORIAK. A New Whole Blood Adenine Nucleotide Microdetermination Applicable to Hemostasis Experiments	35
B. D. DRUJAN, R. CASTILLON, AND E. GUERRERO. Application of Fluorometry in the Determination of Vitamin A	44
J. P. LIBERTI. Rapid Spectrophotometric Determination of <i>p</i> -Nitrophenylpropionate Esterase Activity in Rat Tissues	53
JANE NICOLET TOAL, GEORGE W. RUSHIZKY, ARNOLD W. PRATT, AND HERBERT A. SOBER. Computer-Assisted Characterization of Oligoribonucleotides by Their Ultraviolet Absorption	60
NORMAN G. ANDERSON. Analytical Techniques for Cell Fractions. VIII. Analytical Differential Centrifugation in Angle-Head Rotors	72
J. K. SMITH, R. HELEN EATON, L. G. WHITBY, AND D. W. MOSS. Large-Scale Gel-Filtration in the Purification of Human Liver and Small Intestine Alkaline Phosphatases	84
MERVYN H. KLINE, FEDOR MEDZIHRAJSKY, AND LOWELL E. HOKIN. Automated Assay of Soluble Preparations of Sodium-Potassium Activated Adenosinetriphosphatase	97
IVAN KLIMES AND MARTA BETUŠOVÁ. Picogram Techniques. III. Separation and Detection of 10^{-11} to 10^{-12} Gram of Cations in Cells and Tissues	102
K. VAN DYKE AND C. SZUSTKIEWICZ. Automated Systems for the Fluorometric Determination of Nucleic Acids by the Ethidium Bromide Technique	109
J. KENNETH HERD. Identification of Acid Mucopolysaccharides by Micro Electrophoresis	117
RAPIER H. McMENAMY. Binding Studies by Dialysis Equilibrium. A Description of an Accurate and Rapid Technique	122

JERRY A. SCHNEIDER, KATHRYN H. BRADLEY, AND J. EDWIN SEEGMILLER. Colorimetric Assay of Cystine Using Noradrenochrome .	129
ELLIOT REDALIEU, INGER M. NILSSON, THOMAS M. FARLEY, KARL FOLKERS, AND FRANK R. KONIUSZY. Determination and Levels of Coenzyme Q ₁₀ in Human Blood	132
M. E. TATE. Separation of Myoinositol Pentaphosphates by Moving Paper Electrophoresis (MPE)	141
A. P. KENDAL. An Automated Determination of Sialic Acids . .	150
P. J. ORSULAK, W. HAAB, AND M. D. APPLETON. Quantitative Estimation of Uric Acid, Xanthine, and Hypoxanthine in Plasma Using Thin-Layer Chromatography	156
I. ROSABELLE McMANUS AND MARIANNA JACKSON. Isolation and Assay of Radioactive Urinary Kynurenic and Xanthurenic Acids	163
J. S. NISSELBAUM. Effects of Phosphate and Other Anions on Measurement of the Activities of the Isozymes of Rat Liver Aspartate Aminotransferase	173
ADDENDUM	182

NUMBER 2, MAY 1968

GERALD F. SMITH AND MARVIN MURRAY. Direct Spectrophotometric Quantitation of Phenylthiohydantoin Derivatives of Amino Acids from Thin Layers of Silica Gel	183
G. B. ANSELL AND M. F. BEESON. A Rapid and Sensitive Procedure for the Combined Assay of Noradrenaline, Dopamine, and Serotonin in a Single Brain Sample	196
NORMAN G. ANDERSON. Analytical Techniques for Cell Fractions. IX. Measurement and Transfer of Small Fluid Volumes . .	207
PAUL S. SATOH AND YOHEI ITO. Quantitative Rapid Microassay of Arginase	219
I-WEN CHEN, JAMES G. KEREIAKES, BEN I. FRIEDMAN, AND EUGENE L. SAENGER. Colorimetric Analysis of Deoxycytidine in Urine after Separation by Ion-Exchange Column Chromatography .	230
NORMAN FELBERG AND JULIUS SCHULTZ. Myeloperoxidase. VII. Separation of Oppositely Charged Proteins or Subunits by Disc Electrophoresis	241
SEVERO PAGLINI. Experimental Aspects of the High-Speed Membrane Osmometer	247
ROY H. MAFFLY. A Conductometric Method for Measuring Micromolar Quantities of Carbon Dioxide	252
GIOVANNI SERLUPU-CRESCENZI, CARLO PAOLINI, AND TERSILIO LEGGIO. Influence of pH on Separation of Nucleotides by Electrophoresis and Chromatography on Ion-Exchange Paper . . .	263

N. ALONZO AND C. H. W. HIRS. Automation of Sample Application in Amino Acid Analyzers	272
JOHN A. HUNT. Continuous-Flow Monitor System for Detection of UV Absorbance, ^{14}C , and ^3H in Effluent of a Column Chromatogram	289
JOHN I. PETERSON AND DONALD S. YOUNG. Evaluation of the Hexokinase Glucose/6-phosphate Dehydrogenase Method of Determination of Glucose in Urine	301
LARS-ÅKE FRANSSON, LENNART RODÉN, AND MARY LOU SPACH. Automated Ion-Exchange Chromatography of Uronic Acids and Uronic Acid-Containing Oligosaccharides	317

SHORT COMMUNICATIONS

HORACIO G. PONTIS. Separation of Fructosans by Gel Filtration	331
A. A. HORTON. A Simple Procedure for the Preparation of Reduced Cytochrome <i>c</i>	334
GENE A. MORRILL, LEONARD A. FEINER, AND ADELE B. KOSTELLOW. A Reaction between Tryptophan and Ascorbic Acid: A Possible Source of Error in the Assay of Tryptophan Oxygenase (Tryptophan Pyrrolase)	335
ARTHUR J. TOMISEK AND WILLIAM A. SHORT. Chromatographic Studies of Pyrimidine Metabolism. I. The Metabolic Products of Aspartate- ^{14}C in <i>Escherichia coli</i>	342
SIDNEY S. WALKENSTEIN, CLYDE M. GOSNELL, EDWARD G. HENDERSON, AND JOANN PARK. Adaptation of the Programma 101 Desk-Top Computer to Automated Determination of Absolute Radioactivity	345
HERBERT K. IJIMA. Two Convenient Freeze-Drying Flasks Incorporating Filters	350
ARTHUR L. KOCH. A Method to Simplify Calculation of Double-Label Experiments	352
LAWRENCE M. WHITE AND MONA A. GAUGER. Adaptation of a Spectrophotometer to Automated Continuous Colorimetric Analysis	355
STEPHEN J. LUNER. Ultraviolet Photography for Visualization of Separation Patterns of Zone Electrophoresis and Other Methods	357
VOLKER NEUHOFF. Simplified Technique of High-Speed Capillary Centrifugation	359
JOSEPH HORWITZ, E. H. STRICKLAND, AND ERNEST KAY. Increased Resolution of Circular Dichroic Spectra Using a Computer of Average Transients	363

C. R. McEWEN, R. W. STALLARD, AND E. TH. JUHOS. Separation of Biological Particles by Centrifugal Elutriation	369
JEREMY B. ROBERTS, IAN E. BUSH, AND NORMAN B. GIBREE. Urinary Steroid Analysis: A Comprehensive Procedure	378
ROLF OHMAN AND OLOF HYGSTEDT. The Isolation of Sialyllactosides with the Aid of Gel Filtration	391
P. VEERAVAGU, MICHINAO MIZUGAKI, AND SALIH J. WAKIL. A Micromethod for Identification of Hydroxy Acids	403
ROMA C. RAINES AND BETTY E. HASKELL. Peptide Stimulation of <i>Streptococcus faecium</i> , a Test Organism for Pyridoxal and Pyridoxamine	413
J. LARS G. NILSSON, THOMAS M. FARLEY, AND KARL FOLKERS. Determination of Biosynthetic Precursors from <i>p</i> -Hydroxybenzoic Acid-U- ¹⁴ C to Ubiquinone	422
R. A. FIRTH, H. A. O. HILL, J. M. PRATT, AND R. G. THORP. Separation and Identification of Organocobalt Derivatives of Vitamin B ₁₂ on Thin-Layer Cellulose	429
J. H. SCHMITT AND M. H. ZENK. Determination of D-Amino Acids by Stereospecific Enzymic Acetylation	433
L. ZEITZ AND R. LEE. Element Analysis in Labeled DNA by X-Ray Fluorescence	442
J. H. PETERS, B. J. BERRIDGE, JR., J. G. CUMMINGS, AND S. C. LIN. Column Chromatographic Analysis of Neutral and Acidic Amino Acids Using Lithium Buffers	459
A. L. TAPPEL. Automated Measurement of Proteolytic Enzymes	466
JUNNOSUKE KOJIMA AND JOSEPH W. HESS. Ascorbic Acid Interference with Estimation of β -Glucosaminidase Activity	474
MURRAY STRASSMAN, LOUIS CECI, AND ANTHONY F. TUCCI. Fluorometric Assay of Malic Acid and Substituted Derivatives	484
ISRAEL POSNER. A Modification of the Ceric Oxidation Method of Butanol-Extractable Iodine Using a New Extraction Filter	492
C. A. BURTIS AND GERALD GOLDSTEIN. Terminal Nucleoside Assay of Ribonucleic Acid by Ligand-Exchange Chromatography	502
JOSEF K. VIKTORA, ALBERT BAUKAL, AND FREDERICK W. WOLFF. New Automated Fluorometric Methods for Estimation of Small Amounts of Adrenaline and Noradrenaline	513
L. E. MARTIN AND C. HARRISON. An Automated Method for the Determination of Noradrenaline and Adrenaline in Tissues, and Biological Fluids	529
J. L. FRAHN AND J. A. MILLS. Separation of Basic Amino Acids by Paper Electrophoresis	546
R. W. KEENAN, GERHARD SCHMIDT, AND TERUJI TANAKA. Quanti-	

tative Determination of Phosphatidal Ethanolamine and Other
Phosphatides in Various Tissues of the Rat 555

ERRATA 566

AUTHOR INDEX 567

SUBJECT INDEX 569

